



Transfer Electromechanical Relay Failsafe Switch  
DC to 12.4 GHz, 2M Lifecycles, TNC, 160 Watts,  
12V, Indicators, TTL, Diodes, Solder Pins

## Electromechanical Relay Switches Technical Data Sheet

**PE71S6511**

### Features

- Transfer Electromechanical Relay Switch
- DC to 12 GHz Frequency Range
- Failsafe Actuator
- TTL Logic Control
- Suppression Diodes
- Indicators
- 2M Lifecycle Rating
- Insertion Loss 0.2 dB typ
- Isolation > 80 dB typ
- VSWR as low as 1.25:1 max
- +28 Volt DC Bias
- Solder Terminal Pins for DC Command Control
- TNC Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 160 Watt Average Power Handling
- 50 Ohm Design
- Hot Switching Capability - Consult Factory
- S-Parameter Data available upon request
- Rugged Design meets Mil-STD-202 Test Conditions

### Applications

- Aerospace & Defense
- Test & Measurement
- Microwave Radio Systems
- Military & Commercial Communication Systems
- Research & Development
- SATCOM
- Wireless Communications
- Enterprise
- IoT

### Description

The PE71S6511 is a Transfer electromechanical relay switch that operates across a wide frequency range of DC to 12 GHz and can handle up to 160W of average power in a break before make condition. The design is rated for 2 million lifecycles and features a Failsafe Actuator. Additional features include TTL control logic, suppression diodes which limit voltage spikes or reverse current, and indicators to monitor the switch position. Impressive typical performance includes 0.2 dB insertion loss and isolation greater than 80 dB. This switch requires +12Vdc bias voltage and operates over a temperature range of -25°C to +65°C. The rugged and compact package assembly supports TNC female connectors and Solder Pins for DC command control functions. And for highly reliable operation, the model is guaranteed to meet MIL-STD-202 environmental test conditions for shock and random vibration.

### Electrical Specifications (TA = +25°C, DC Voltage = +12 Vdc)

Switch Type	Transfer
Actuator Type	Failsafe
Actuator Options	Indicators, TTL Logic
TTL Control	on: 2.4 to 5.5 Volts off: 0 to 0.8 Volts

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		12.4	GHz
Operating Voltage		+12		Volts
Actuating Set Current @ +12 Volts			380	mA
VSWR		1.3:1	1.7:1	
Insertion Loss		0.2	0.6	dB
Isolation	60	80		dB

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Transfer Electromechanical Relay Failsafe Switch DC to 12.4 GHz, 2M Lifecycles, TNC, 160 Watts, 12V, Indicators, TTL, Diodes, Solder Pins PE71S6511](#)



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Input Power (CW) (at 12.4 GHz)	50	Watts
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### Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 2	2 to 4	4 to 8	8 to 12		GHz
VSWR, Max	1.2:1	1.3:1	1.5:1	1.7:1		
Insertion Loss, Max	0.2	0.4	0.5	0.6		dB
Isolation, Min	80	80	70	60		dB

### Mechanical Specifications

#### Size

Length	2.52 in [64.01 mm]
Width/Diameter	3.12 in [79.25 mm]
Height	1.75 in [44.45 mm]
Weight	0.1 lbs [45.36 g]

#### Connectors

RF Connector Type	TNC Female
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### Environmental Specifications

#### Temperature

Operating Range	-25 to +65 deg C
Storage Range	-55 to +100 deg C

#### Shock

MIL-STD-202 Method 213, Condition D, 500G (non oper)

#### Vibration

MIL-STD-202 Method 204, Condition D, 10G RMS (non oper)

**Compliance Certifications** (see [product page](#) for current document)

### Plotted and Other Data

Notes:

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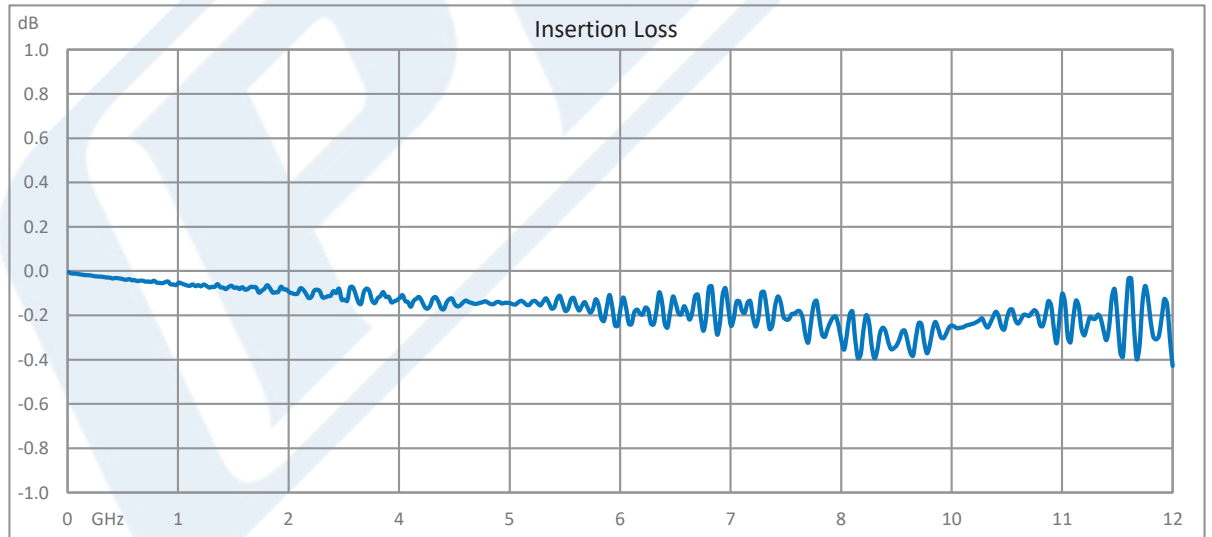
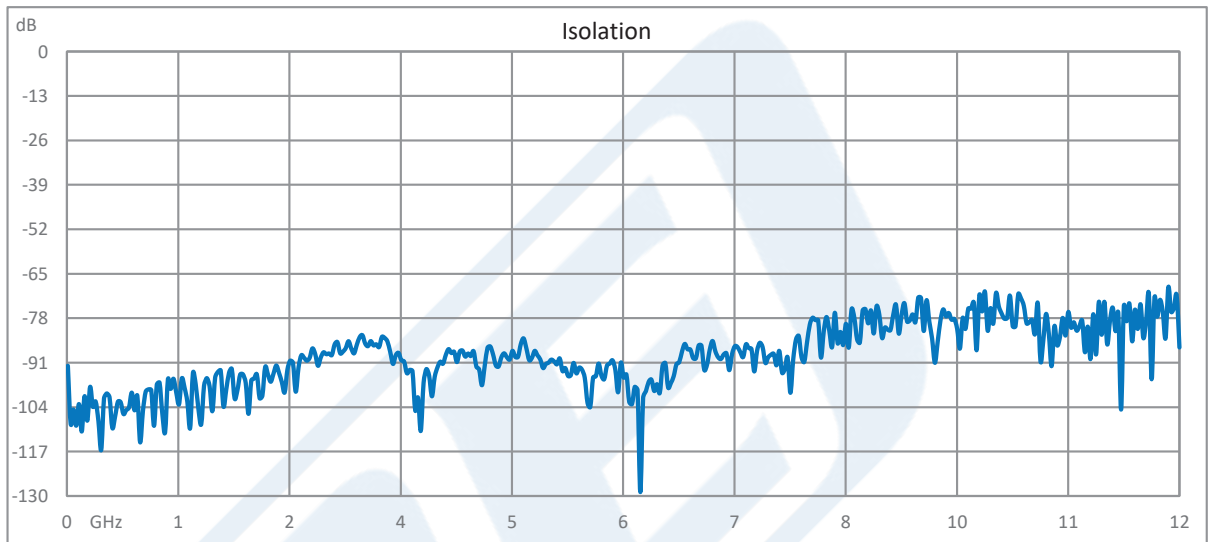


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**Electromechanical Relay Switches Technical Data**

**PE71S6511**

**Typical Performance Data**



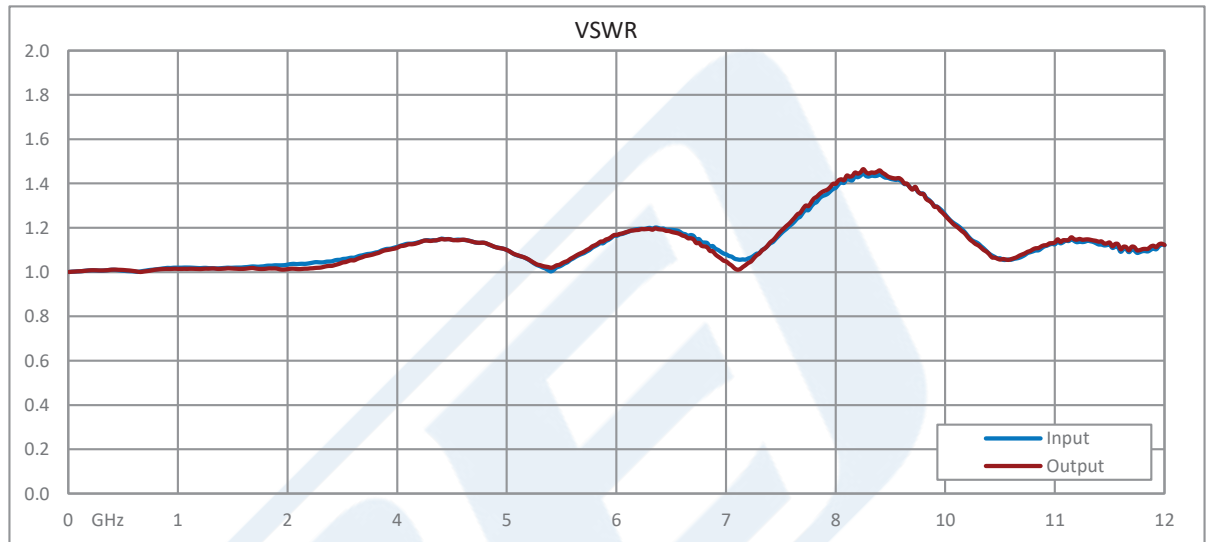
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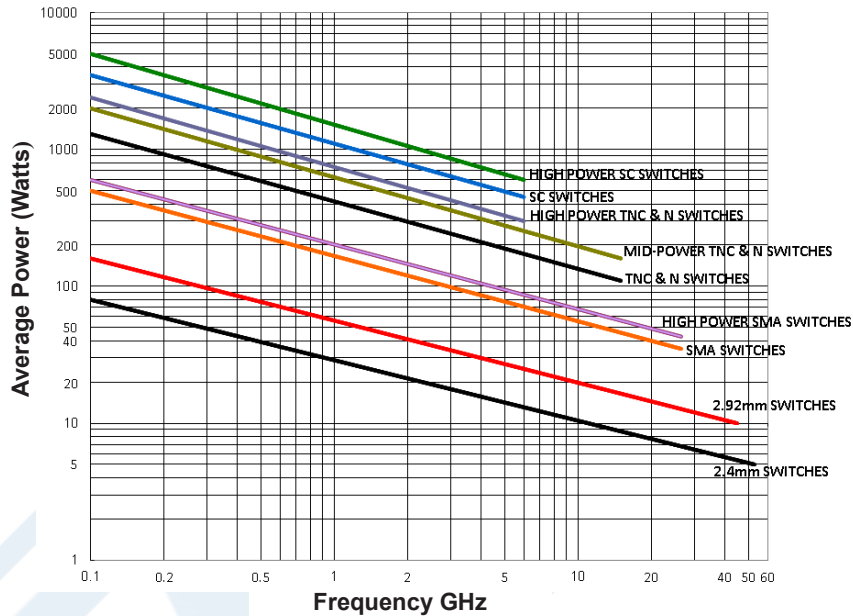


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**Power Handling vs. Frequency**



**Power Handling De-rating vs. Load VSWR**



Power Handling Chart and Derating Curves based on the following Test and Environmental Conditions:  
 Ambient temperature: 20-25°C  
 Altitude: Sea Level to 1,000 feet  
 Relative Humidity: 50-55%  
 Load VSWR: ≤ 1.20:1  
 Operation: Cold Switching

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Transfer Electromechanical Relay Failsafe Switch DC to 12.4 GHz, 2M Lifecycles, TNC, 160 Watts, 12V, Indicators, TTL, Diodes, Solder Pins from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

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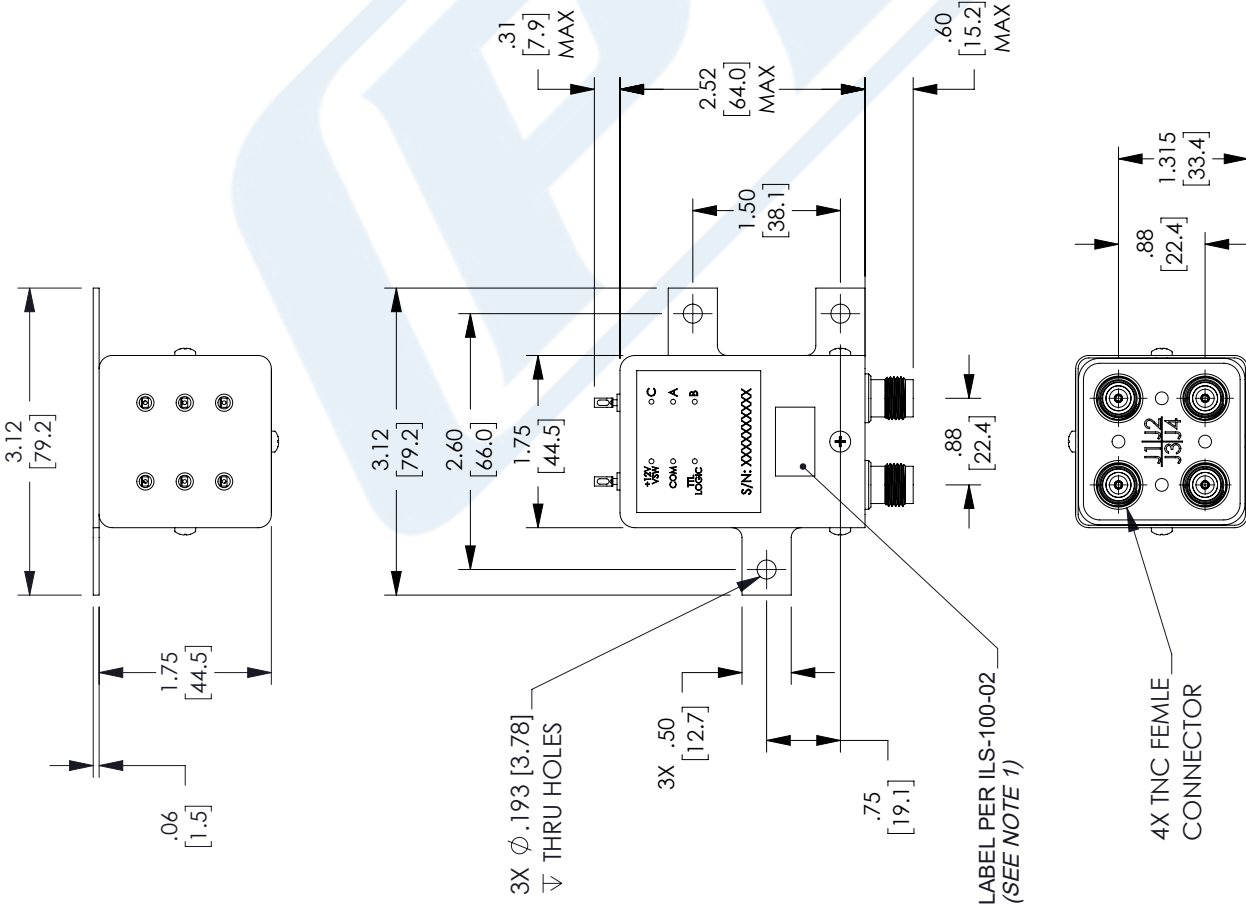
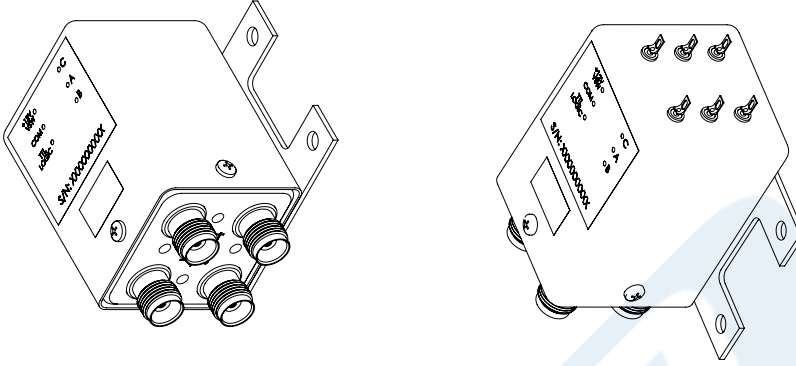
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# PE71S6511 CAD Drawing

Transfer Electromechanical Relay Failsafe Switch DC to 12.4 GHz, 2M Lifecycles, TNC, 160 Watts, 12V, Indicators, TTL, Diodes, Solder Pins

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	05/17/2022	T. GALLA



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TOLERANCES:

.X = ±.2 [5.08] FRACTIONS ±.1/32  
 .XX = ±.02 [.51] ±.1/32  
 .XXX = ±.005 [.13] ANGLES ± 1°

CABLE LENGTH (L) TOLERANCES:  
 L ≤ 12 [305] = +1 [25] / -0  
 12 [305] < L ≤ 60 [1524] = +2 [51] / -0  
 60 [1524] < L ≤ 120 [3048] = +4 [102] / -0  
 120 [3048] < L ≤ 300 [7620] = +6 [152] / -0  
 300 [7620] < L = +5% / -0

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THIRD-ANGLE PROJECTION

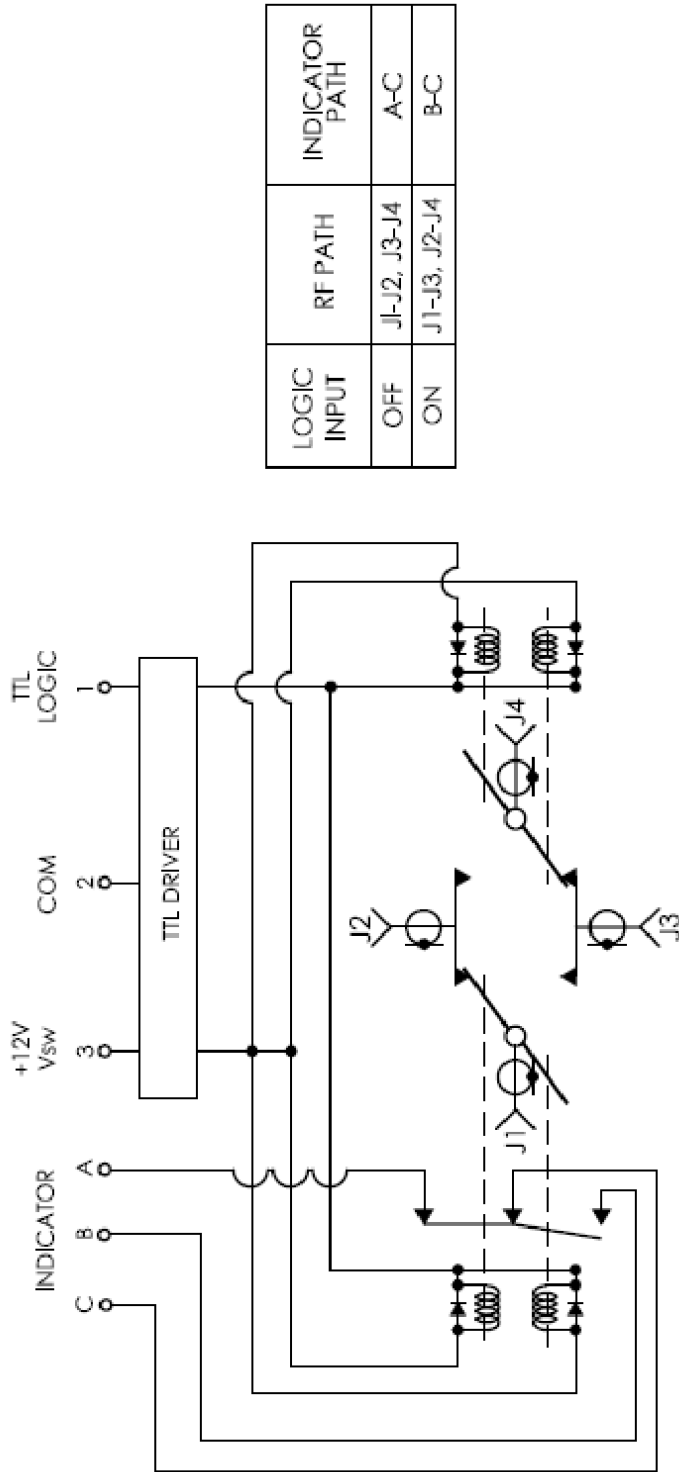
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THIRD-ANGLE PROJECTION

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